1. (Currently Amended)   A data transformation system for use in a heterogeneous computer system, said data transformation system comprising:

at least one client adapted to initiate a request for transformation of data in a first data format to data in a second data format;

a plurality of peer transformation servers, each of said transformation servers including a plurality of data converters and a representation of available data transformations between a plurality of input data formats associated with at least some of said transformation servers and a plurality of output data formats associated with at least some of said transformation servers, said representation including a plurality of unidirectional edges, with each one of said edges extending from one of said input and output data formats to another of said input and output data formats, said transformation servers collectively including at least one of said data converters for each of said edges, at least one of said transformation servers adapted to receive said request for transformation of data, select at least one intermediate data format from a plurality of different intermediate data formats and select at least one intermediate data transformation from said first data format to said selected at least one intermediate data format and a final data transformation from a final one of said selected at least one intermediate data format to said second data format, with each of said intermediate and final data transformations being associated with a corresponding one of said edges, said at least one of said transformation servers adapted to initiate a plurality of said data converters corresponding to said selected intermediate and final data transformations, in order to obtain said data in the second data format, and dispose said data in the second data format; and

a communication network adapted to provide communication among said transformation servers and said client.

2. (Currently Amended)   A data transformation system for use in a heterogeneous computer system, said data transformation system comprising:

at least one client adapted to initiate a request for transformation of data in a first data format to data in a second data format;

a plurality of peer transformation servers, each of said transformation servers including a plurality of data converters and a representation of available data transformations between a plurality of input data formats associated with at least some of said transformation servers and a plurality of output data formats associated with at least some of said transformation servers, said representation including a plurality of unidirectional edges, with each one of said edges extending from one of said input and output data formats to

2

another of said input and output data formats, said transformation servers collectively including at least one of said data converters for each of said edges, at least one of said transformation servers adapted to receive said request for transformation of data and select at least one intermediate data transformation from said first data format to at least one intermediate data format and a final data transformation from said intermediate data format to said second data format, with each of said intermediate and final data transformations being associated with a corresponding one of said edges, said at least one of said transformation servers adapted to initiate a plurality of said data converters corresponding to said selected intermediate and final data transformations, in order to obtain said data in the second data format, and dispose said data in the second data format; and

a communication network adapted to provide communication among said transformation servers and said client,

~~The data transformation system of Claim 1~~

_____wherein each of said transformation servers further includes a matrix having said input data formats, said output data formats and a value for each pair of said input and output data formats, said value representing whether a data transformation from said input data format to said output data format of said pair is feasible; and wherein said one of said transformation servers accesses said matrix of said one of said transformation servers to determine if said request for a transformation of data is feasible before selecting said intermediate and final data transformations.

3. (Original) The data transformation system of Claim 2 wherein said matrix is a reachability matrix.

4. (Original) The data transformation system of Claim 1 wherein said one of said transformation servers employs a breadth-first search to select said intermediate and final data transformations.

5. (Original) The data transformation system of Claim 4 wherein said one of said transformation servers includes an adjacency matrix having said input data formats, said output data formats and a value for each pair of said input and output data formats, said value representing whether a data transformation directly from said input data format to said output data format of said pair is possible; and wherein said one of said transformation servers further includes a routine to convert said adjacency matrix to said reachability matrix.

6. (Original) The data transformation system of Claim 1 wherein said transformation servers further collectively include a plurality of said data converters for at

least one of said edges; and wherein said one of said transformation servers selects and initiates one of said plurality of data converters for said at least one of said edges.

7. (Original)   The data transformation system of Claim 6 wherein said transformation servers include a first transformation server and a second transformation server, said first transformation server includes a first data converter for one of said edges, said second transformation server includes a second data converter for said one of said edges; and wherein said one of said transformation servers includes an algorithm to evaluate and select one of said first and second data converters for said one of said edges.

8. (Currently Amended)   The data transformation system of Claim 7 wherein each of said first and second data converters has have a cost associated with said one of said edges; and wherein said algorithm evaluates the costs of said first and second data converters to select one of said first and second data converters for said one of said edges.

9. (Original)   The data transformation system of Claim 7 wherein each of said first and second data converters has a time duration associated with said one of said edges; and wherein said algorithm evaluates the time durations of said first and second data converters to select one of said first and second data converters for said one of said edges.

10. (Original) The data transformation system of Claim 7 wherein each of said first and second data converters has a quality value associated with said one of said edges; and wherein said algorithm evaluates the quality values of said first and second data converters to select one of said first and second data converters for said one of said edges.

11. (Original) The data transformation system of Claim 7 wherein each of said first and second data converters has a conversion performance vector associated with said one of said edges; and wherein said algorithm evaluates the conversion performance vectors of said first and second data converters to select one of said first and second data converters for said one of said edges.

12. (Original) The data transformation system of Claim 11 wherein said conversion performance vector includes a plurality of attributes, which are selected from the list comprising: a count of conversion failures by a corresponding one of said data converters, whether said corresponding one of said data converters is local or remote with respect to said one of said transformation servers, a value representing quality of conversion by said corresponding one of said data converters, and a size of a file to be converted by said corresponding one of said data converters.

13. (Original) The data transformation system of Claim 11 wherein said conversion performance vector includes a direct cost attribute, a quality attribute and a time duration attribute, with each of said attributes having a weight value associated therewith.

14. (Original) The data transformation system of Claim 13 wherein at least one of said attributes has a static value.

15. (Original) The data transformation system of Claim 13 wherein at least one of said attributes has a dynamic value.

16. (Original) The data transformation system of Claim 6 wherein said transformation servers include a first transformation server, a second transformation server and a third transformation server, said first transformation server includes a first data converter for one of said edges, said second transformation server includes a second data converter for said one of said edges, said third transformation server includes a third data converter for said one of said edges; wherein said third transformation server is offline; and wherein said one of said transformation servers includes an algorithm to evaluate and select one of said first and second data converters for said one of said edges.

17. (Original) The data transformation system of Claim 1 wherein said client is a transformation server.

18. (Original) The data transformation system of Claim 1 wherein said communication network is a computer network; and wherein said client is a computer communicating on said computer network.

19. (Original) The data transformation system of Claim 1 wherein said transformation servers include a first transformation server and a second transformation server, said first transformation server includes a set of data converters for at least some of said edges, said second transformation server includes a corresponding set of said data converters for said at least some of said edges; and wherein said one of said transformation servers includes an algorithm to evaluate and select from the data converters of said set and the data converters of said corresponding set.

20. (Original) The data transformation system of Claim 19 wherein each of said first and second data converters has a conversion performance vector associated with said one of said edges; and wherein said algorithm evaluates the conversion performance vectors of said first and second data converters to select one of said first and second data converters for said one of said edges.

21. (Original) The data transformation system of Claim 19 wherein said one of said transformation servers is said first transformation server; and wherein said first

5

transformation server includes a first routine to invoke a data converter of said first transformation server, and a second routine to invoke a data converter remote from said first transformation server and associated with said second transformation server.

22. (Original) The data transformation system of Claim 1 wherein said first and second data formats are selected from the list comprising a file, facsimile data, scanned data, and image data.

23. (Original) The data transformation system of Claim 1 wherein at least one of said first and second data formats is an application specific format.

24. (Original) The data transformation system of Claim 1 wherein at least one of said first and second data formats is a hard copy.

25. (Original) The data transformation system of Claim 1 wherein at least one of said first and second data formats is selected from the list comprising HTML, RTF, facsimile data, scanned data, image data, and printed data.

26. (Original) The data transformation system of Claim 1 wherein said first and second data formats are selected from the list of data formats comprising a file, facsimile data, scanned data, image data, an application specific format, a hard copy, HTML, and RTF; and wherein said one of said transformation servers acquires said data in said first data format in one of said data formats and disposes said data in said second data format in a different one of said data formats.

27. (Original) The data transformation system of Claim 1 wherein said request includes a data file in said first data format, a definition of said second data format, and an instruction for disposing said data in the second data format.

28. (Original) The data transformation system of Claim 27 wherein said instruction is selected from the list comprising: holding said data in the second data format for a predetermined time for subsequent retrieval of said data in the second data format and opening a connection on said communication network between said client and said one of said transformation servers before returning said data in the second data format to said client, returning said data in the second data format by opening a connection between said one of said transformation servers and said client before returning said data in the second data format to said client, keeping a connection open on said communication network between said client and said one of said transformation servers until after receiving said data in the second data format, mailing said data in the second data format, and copying said data in the second data format.

29. (Original) The data transformation system of Claim 28 wherein said instruction is mailing said data in the second data format in an electronic mail message over said communication network.

30. (Original) The data transformation system of Claim 28 wherein said one of said transformation servers has disk storage; and wherein said instruction is copying said data in the second data format to said disk storage.

31. (Original) The data transformation system of Claim 28 wherein one of said transformation servers has disk storage; and wherein said instruction is copying said data in the second data format to said disk storage over said communication network.

32. (Original) The data transformation system of Claim 1 wherein said at least one client includes a plurality of client applications and a plurality of transformation servers; and wherein said one of said transformation servers includes a routine for receiving requests from each of said client applications and transformation servers, and a queue for storing said received requests.

33. (Original) The data transformation system of Claim 1 wherein said data in a first data format was created by an application; and wherein said one of said transformation servers initiates at least one data converter including a corresponding application to obtain said data in the second data format.

34. (Original) The data transformation system of Claim 1 wherein said data in a first data format was created by a first application; and wherein said one of said transformation servers initiates at least one data converter including a different second application to obtain said data in the second data format.

35. (Currently Amended) The data transformation system of Claim 1 wherein said data in a first data format was created by a first application; wherein said one of said transformation servers initiates at least one data converter including a corresponding first application to obtain data in said selected at least one intermediate data format, and initiates at least one data converter including a second different application to obtain said data in said second data format.

36. (Original) The data transformation system of Claim 35 wherein said one of said transformation servers includes an algorithm to evaluate and select said at least one data converter including a corresponding first application and said at least one data converter including a second different application.

37. (Original) The data transformation system of Claim 35 wherein some of said data converters are remote from said one of said transformation servers; and wherein

7

said one of said transformation servers includes a routine to invoke said remote data converters.

38. (Original) The data transformation system of Claim 35 wherein some of said data converters are local to said one of said transformation servers; and wherein said one of said transformation servers includes a routine to invoke said local data converters.

39. (Original) The data transformation system of Claim 35 wherein a first set of said data converters are remote from said one of said transformation servers, and a second set of said data converters are local to said one of said transformation servers; and wherein said one of said transformation servers includes an algorithm to evaluate and select some of said first and second sets of said data converters, a routine to invoke one of the first set of said data converters, and a routine to invoke one of the second set of said data converters.

40. (Original) The data transformation system of Claim 39 wherein said edges include a first edge, a second edge and a third edge; wherein said transformation servers include a first transformation server having a first data converter for the first edge, and a second transformation server having a second data converter for the second edge, said first and second transformation servers being remote from said one of said transformation servers, which has a third data converter for the third edge; and wherein said algorithm evaluates and selects the first data converter in the first transformation server, the second data converter in the second transformation server, and the third data converter in said one of said transformation servers.

41-47. (Canceled)

48. (Currently Amended)   A method for transforming data in a heterogeneous computer system, said method comprising the steps of:

initiating a request for transformation of data in a first data format to data in a second data format;

communicating said request over a communication network;

receiving said request in one of a plurality of peer transformation servers;

including with each of said peer transformation servers a plurality of data converters and a representation of data transformations between a plurality of input data formats associated with at least some of said peer transformation servers and a plurality of output data formats associated with at least some of said peer transformation servers;

8

including with said representation a plurality of unidirectional edges, with each one of said edges extending from one of said input and output data formats to another of said input and output data formats;

providing at least one of said data converters for each of said edges;

selecting at least one intermediate data format from a plurality of different intermediate data formats;

selecting at least one intermediate data transformation from said first data format to said selected at least one intermediate data format;

selecting a final data transformation from a final one of said selected at least one intermediate data format to said second data format;

initiating a plurality of said data converters corresponding to said selected intermediate and final data transformations, in order to obtain said data in the second data format; and

disposing said data in the second data format.

49. (Original) The method of Claim 48 further comprising:

including with each of said data converters a wrapper and at least one of an application and a device; and

employing a common application programming interface to a corresponding one of said peer transformation servers with each of said wrappers.

50. (Original) The method of Claim 49 further comprising:

employing a script as one of said wrappers.

51. (Original) The method of Claim 49 further comprising:

requesting interaction by a human being from one of said wrappers.

52. (Original) The method of Claim 51 further comprising:

employing hard copy as said second data format;

printing said hard copy; and

requesting disposition of said hard copy by said human being.

53. (Original) The method of Claim 48 further comprising:

employing a data file as said second data format; and

sending said data file over said communication network.

54. (Original) The method of Claim 53 further comprising:

sending said data file as part of an electronic mail message.

55. (Original) The method of Claim 53 further comprising:

receiving said sent data file from said communication network; and

. displaying said received data file.

56. (Original) The method of Claim 55 further comprising:

printing said received data file.

57. (Original) The method of Claim 48 further comprising:

sending a status request regarding said request for transformation of data over said communication network;

receiving said status request; and

returning a current status of said requested transformation over said communication network.

58. (Original) The method of Claim 48 further comprising:

sending a request to cancel said request for transformation of data over said communication network;

receiving said request to cancel; and

canceling said requested transformation.

59. (Original) The method of Claim 48 further comprising:

including with said request for transformation of data a source type to define said first data format, a destination type to define to said second data format; a file of said data in said first data format, and disposition instructions for said data in said second data format; and

communicating said source type, said destination type, said file, and said disposition instructions over said communication network.

60. (Currently Amended)   A method for transforming data in a heterogeneous computer system, said method comprising the steps of:

initiating a request for transformation of data in a first data format to data in a second data format;

communicating said request over a communication network;

receiving said request in one of a plurality of peer transformation servers;

including with each of said peer transformation servers a plurality of data converters and a representation of data transformations between a plurality of input data formats associated with at least some of said peer transformation servers and a plurality of output data formats associated with at least some of said peer transformation servers;

10

. including with said representation a plurality of unidirectional edges, with each one of said edges extending from one of said input and output data formats to another of said input and output data formats;

providing at least one of said data converters for each of said edges;

selecting at least one intermediate data transformation from said first data format to at least one intermediate data format;

selecting a final data transformation from said intermediate data format to said second data format;

initiating a plurality of said data converters corresponding to said selected intermediate and final data transformations, in order to obtain said data in the second data format;

disposing said data in the second data format; and

~~The method of Claim 48 further comprising:~~

determining if said request for a transformation of data is feasible before selecting said intermediate and final data transformations.

61. (Original) The method of Claim 48 further comprising:

including with each of said data converters a wrapper and at least one of an application and a device;

employing a configuration file in a local transformation server to define a plurality of remote transformation servers; and

polling at least some of said remote transformation servers to determine a list of available wrappers.

62-67. (Canceled)

68. (Original) The method of Claim 48 further comprising:

adding another data converter to one of said peer transformation servers for one of said edges;

maintaining a constant representation of said edges; and

defining for said one of said edges at least two edgelets corresponding to a previous data converter and said added data converter for said one of said edges.

69. (Original) The method of Claim 68 further comprising:

evaluating costs associated with said at least two edgelets; and

selecting one of said data converters corresponding to one of said edgelets having the least cost.

70. (Original) The method of Claim 48 further comprising:

. detecting a failure of one of said data converters; and

invoking an alternative one of said data converters.

71. (Original) The method of Claim 48 further comprising:

deleting one of said edges; and

recomputing said representation.

72. (Original) The method of Claim 48 further comprising:

detecting a failure of one of said data converters;

reselecting at least one intermediate data transformation from said first data format to at least one intermediate data format;

reselecting a final data transformation from said reselected intermediate data format to said second data format; and

reinitiating a plurality of said data converters corresponding to said reselected intermediate and final data transformations, in order to obtain said data in the second data format.

73. (Original) The method of Claim 48 further comprising:

detecting a failure of one of said data converters;

polling at least some of said peer transformation servers to locate a data converter corresponding to said failed one of said data converters;

reselecting at least one intermediate data transformation from said first data format to at least one intermediate data format;

reselecting a final data transformation from said reselected intermediate data format to said second data format; and

reinitiating a plurality of said data converters corresponding to said reselected intermediate and final data transformations, in order to obtain said data in the second data format.

74. (Original) The method of Claim 48 further comprising:

employing a conversion performance vector associated with one of said edges;

including with said conversion performance vector a plurality of attributes and a plurality of weight values;

employing a file having a file-size and one of said input and output electronic formats;

employing as one of said attributes a cost which is a function of said file-size and the data converters for said one of said edges; and

. evaluating the conversion performance vector to select one of said data converters for said one of said edges.

75-77. (Canceled)

78. (Currently Amended)   A method for transforming data in a heterogeneous computer system, said method comprising the steps of:

initiating a request for transformation of data in a first data format to data in a second data format;

communicating said request over a communication network;

receiving said request in one of a plurality of peer transformation servers;

including with each of said peer transformation servers a plurality of data converters and a representation of data transformations between a plurality of input data formats associated with at least some of said peer transformation servers and a plurality of output data formats associated with at least some of said peer transformation servers;

including with said representation a plurality of unidirectional edges, with each one of said edges extending from one of said input and output data formats to another of said input and output data formats;

providing at least one of said data converters for each of said edges;

selecting at least one intermediate data transformation from said first data format to at least one intermediate data format;

selecting a final data transformation from said intermediate data format to said second data format;

initiating a plurality of said data converters corresponding to said selected intermediate and final data transformations, in order to obtain said data in the second data format;

disposing said data in the second data format;

~~The method of Claim 48 further comprising:~~

employing a file of voice data;

employing a unique identifier, which identifies a person, application or device which originated the voice data;

including said file of voice data and said unique identifier with said request for transformation of data;

accessing a voice profile based upon said unique identifier; and

employing said voice profile to convert said file of voice data to text data.

79. (Original) The method of Claim 48 further comprising:

initiating a request for transformation of data in a third data format to data in a fourth data format;

selecting one data transformation from said third data format to said fourth data format;

initiating one of said data converters corresponding to said selected one data transformation, in order to obtain said data in the fourth data format; and

disposing said data in the fourth electronic format.

80. (Original) The method of Claim 48 further comprising:

employing a first transformation server including a first data converter for one of said edges;

employing a second transformation server including a second data converter for another one of said edges; and

initiating said first and second data converters, in order to obtain said data in the second electronic format.

81. (Original) The method of Claim 48 further comprising:

employing a first transformation server including a first data converter for one of said edges and a second data converter for another one of said edges; and

initiating said first and second data converters, in order to obtain said data in the second electronic format.

82-86. (Canceled)